



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,890	08/16/2006	Walter Demuth	1006/0113PUS1	5525
606601	7590	10/27/2009	EXAMINER	
Muncy, Geissler, Olds & Lowe, PLLC	P.O. BOX 1364	FAIRFAX, VA 22038-1364	ROSATI, BRANDON MICHAEL	
			ART UNIT	PAPER NUMBER
			3744	
MAIL DATE		DELIVERY MODE		
10/27/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,890	<b>Applicant(s)</b> DEMUTH ET AL.
	<b>Examiner</b> BRANDON M. ROSATI	<b>Art Unit</b> 3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 31 July 2009.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.  
 4a) Of the above claim(s) 11 and 18-23 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-10,12-17 and 24-28 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 14 April 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 4/14/2006 and 7/31/2009.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Species A in the reply filed on 7/31/2009 is acknowledged.
2. Claims 11 and 18-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/31/2009.

***Specification***

3. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it contains legal phraseology such as the word "comprising" in line 1. Correction is required. See MPEP § 608.01(b). Applicant is reminded that no new matter should be added. Applicant is reminded of the proper language and format for an abstract of the disclosure.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The Examiner suggest the following title: "Heat Exchanger In Particular For Motor Vehicles Having Two Fluids"

6. The disclosure is objected to because of the following informalities: On page 1, line 36, the phrase "claim 1" should not merely refer to a claim, but rather the content of the claim should be recited. On page 2, line 28, the phrase "subclaims" should not merely refer to the subclaims, but rather the content of the claims should be recited. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. Claims 1-7, 10, 12-17, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1).

Regarding claim 1, Demuth et al. disclose in Figure 1, all the claimed limitations including a heat exchanger having a block which has pipes (2) on which a first and second medium can flow on respective sides, having flow ducts (4), and pipe ends, end pieces (combination of (8, 12, and 16) and (24, 28, and 30), each having a base plate (8 and 24), a diverter plate (12 and 28) and a cover plate (16 and 30), as well as an inlet and outlet chamber (20 and 21). It is noted that the phrases "for a motor vehicle," "being possible to conduct the first medium from the inlet chamber to the outlet chamber to the outlet chamber through the flow ducts," and "can flow on the secondary side" are statements of intended use and the device is capable of performing the function. Demuth et al. do not disclose a housing casing surrounding the pipes having an inlet and outlet. However, Carpentier disclose in Figure 1, a housing casing (1) surrounding pipes (Paragraph [0023]). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. with the housing casing of Carpentier because this would allow for the heat exchange unit to be a self contained unit which would then be able to utilize two fluids (i.e. two liquids).

Regarding claim 2, Demuth et al. disclose in Figure 1, flat pipes (2). It is noted that claim 2 contains a product by process limitation (i.e. extruded). Where a product by process claim is

rejected over a prior art product that appears to be identical, although produced by a different process, the burden is upon the applicants to come forward with evidence establishing an unobvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983)

Regarding claim 3, Demuth et al. disclose in Figure 1, each pipe having a plurality of flow ducts (4).

Regarding claim 4, Demuth et al. disclose in Figure 1, the heat exchanger block having two end pieces (combination of (8, 12, and 16) and (24, 28, and 30)

Regarding claim 5, the combined teachings of Demuth et al. and Carpentier disclose the housing. It is noted that, when in combination with Demuth et al., the housing would be between the end pieces. Further, it would have been obvious to one of ordinary skill to position the housing between the two end pieces since, at this location, the second medium would be flowing.

Regarding claim 6, Demuth et al. disclose in Figure 1, two plates of the end piece are integral.

Regarding claim 7, Carpentier disclose in Figure 1, a housing (1) which is made of metal (i.e. iron) (Paragraph [0021]).

Regarding claim 10, Carpentier disclose in Figure 1, a housing (1) which has an inlet (25) and outlet (29) arranged on opposite sides of the housing.

Regarding claim 12, Carpentier disclose in Figure 1, a housing (1) which has an inlet (25) and outlet (29) arranged on opposite ends of the housing.

Regarding claim 13, the combined teachings of Demuth et al. and Carpentier disclose distributor and collector chambers (regions immediately inside the inlet and outlet) (see Carpentier).

Regarding claim 14, Demuth et al. disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (7) arranged between the pipes.

Regarding claim 15, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) having a longitudinal extent corresponding to the inlet and outlet.

Regarding claim 16, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) which are rectangular in shape.

Regarding claim 17, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) which are embodied in the form of a parallelogram and leave an approximate triangular inflow and outflow region between the pipes.

Regarding claim 24, Carpentier disclose in Figures 1 and 3, ribs or inserts which transverse ducts for the second medium (see Figure 3).

Regarding claims 25 and 26, the combined teachings of Demuth et al. and Carpentier disclose all the structural limitations of the claims. The phrases “configured for a single flow on the primary side” (as per claim 25) and “can be configured for a dual flow or more on the primary side” (as per claim 26) are statements of intended use and the device is capable of performing the functions. The applicant should be reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here.

11. Claims 8 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1) in further view of Hayashi et al. (U.S. Pub. No. 2003/0019616 A1).

Regarding claim 8, the combined teachings of Demuth et al. and Carpentier disclose all the claimed limitations except the casing being connected by solder. However, Hayashi discloses a heat exchanger in which the parts are connected together by soldering (Paragraphs [0030]-[0033]). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. and Carpentier with the soldering of Hayashi et al. because solder is well known and often used in heat exchanger construction so as to form a fluidly tight heat exchanger and reduce the risk of failure.

Regarding claim 9, Hayashi et al. disclose in Figure 3B a housing which is rectangular in cross section having 4 sides.

12. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1) in further view of Hirao et al. (U.S. Patent No. 6,237,357 B1).

Regarding claim 27, the combined teachings of Demuth et al. and Carpentier disclose all the claimed limitations including utilizing two fluids, but not the first medium being a refrigerant which can operate in dual phase. However, Hirao et al. disclose a heat exchanger which utilizes refrigerant as a fluid and operated in a dual phase (Column 1, line 63- Column 2, line 9). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. and Carpentier with the refrigerant of Hirao et al. because this is a well known type of refrigerant used in heat exchangers and having a dual phase refrigerant allows for the overall amount of heat transfer to increase since more heat can be exchanged by the fluid.

Regarding claim 28, the combined teachings of Demuth et al, Carpentier, and Hirao et al. disclose all the claimed limitations including utilizing two fluids (see Carpentier) and having one of the fluids be a refrigerant (see Hirao et al.). It is noted that it would be an obvious mechanical expedient to one of ordinary skill to choose a heat exchange fluid such as refrigerant for either fluid in the heat exchange device, since it is well known that heat exchangers often utilize refrigerant due to its good heat exchange properties.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carpentier (U.S. Pub. No. 2002/0043363 A1) discusses a heat exchanger.
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON M. ROSATI whose telephone number is (571)270-3536. The examiner can normally be reached on Monday-Friday 8:00am- 4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571) 272-4834 or (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

Art Unit: 3744

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BMR 10/22/2009	/Cheryl J. Tyler/ Supervisory Patent Examiner, Art Unit 3744
-------------------	--